PHENIX

TECHNICAL SUPPORT 2009

PHENIX WEEKLY PLANNING

5/07/2009

Don Lynch

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Next Maintenance Access Day – May 13

- RPC Installation Gap 5 prep - vacuum
- RPC Installation Support measurements
- MuTrigger FEE South Cable Tray planning
- RPC3 N gap interferences planning
- Other ??

Anyone wishing to access the Tunnel either north or south of the IR should inform the RC at least 2 days ahead of time to coordinate with C-A-D. If you require technician assistance inform me as well.

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Shutdown '09 Major tasks (expect 5 month shutdown):

- EOR party June 26/2009 shutdown Begins June 28
- End run, remove wall, MuID collars down, EC to AH (3 weeks)
- RPC Factory Operations (in progress and continuing beyond Shutdown '09)
- RPC Station 3 North (entire shutdown)
- Install Station 1 South scaffolding (1 week)
- Install Station 2/3 scaffolding (2 weeks)
- Install stations 1, 2 and 3 south MuTrigger FEE's (12 weeks)
- MuTr decapacitations: station 3 south (3 weeks)
- PC1 East repair (4 weeks)
- Mechanical/Electrical Plumbing installation of (4) new DCM racks
- Add Ar Dewar and expand gas pad to add storage (12 weeks)
- Prep for future upgrades/existing equipment maintenance & Repair (as necessary)

Shutdown Prep Now to June 28

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Task	Complete By
RPC Installation design parts & Tools	May 15
RPC Electronics Rack Prep	June 20
RPC Installation parts and Tools Fabrication	June 28
MuTrigger FEE Parts and Tools ordering	June 28
MuTrigger FEE Cable Management plan	June 15
RPC3 N Cable and Piping relocation Plan	June 15
RPC Factory Tools complete and commissioned	June 28

End of Run, Start of Shutdown

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Task	Completion Date
• End of Run Party	6/26
• End of Run 9	6/28
• Flammable Gas Purge	6/30
• Open Wall and Disassemble	7/2
• MuID Collar Removal	7/8
• Move MMS South	7/10
• Test RMC Higher comm speed on EC before disconnecting	7/15
• Disconnect EC and move to AH	7/17
• Move MuID Collars to AH	7/20
• Install IR floor plates, rolling cart & manlift in IR	7/22
• Reconnect EC for shutdown mode	7/24
• Remove East/West vertical & Upper Bias MMS lampshades	7/24

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RPC Factory Operations

• Gap and Module assembly and testing (continues through shutdown)	in-progress
• Gap and Module Storage with humidity control (need to get permanent elec., 2nd humidity controller & covers for last 3 storage racks)	Nearly complete
• Tilting transport Table	Nearly complete
• Burn in test stand (Bike rack section)	In Progress
• Burn-in test stand gas system and controls (ready for 1st half octant)	5/29
• Assembly of half-octants for station 3 north	6/1-9/1

RPC Factory

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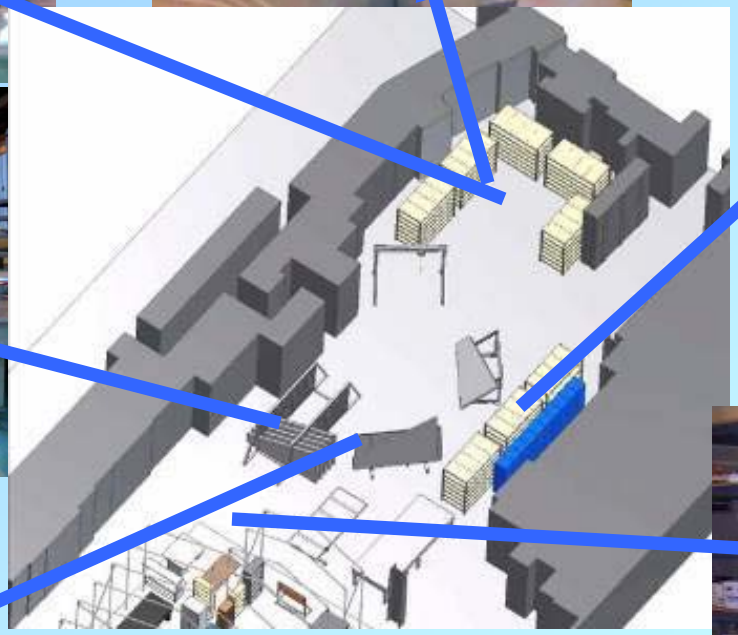

RPC Factory

Tilting Transport Table

Ready for Field Testing and field adjustments

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RPC Factory Burn In Test Station
For Octant and Half Octant Burn-in Tests

Assembly to begin soon

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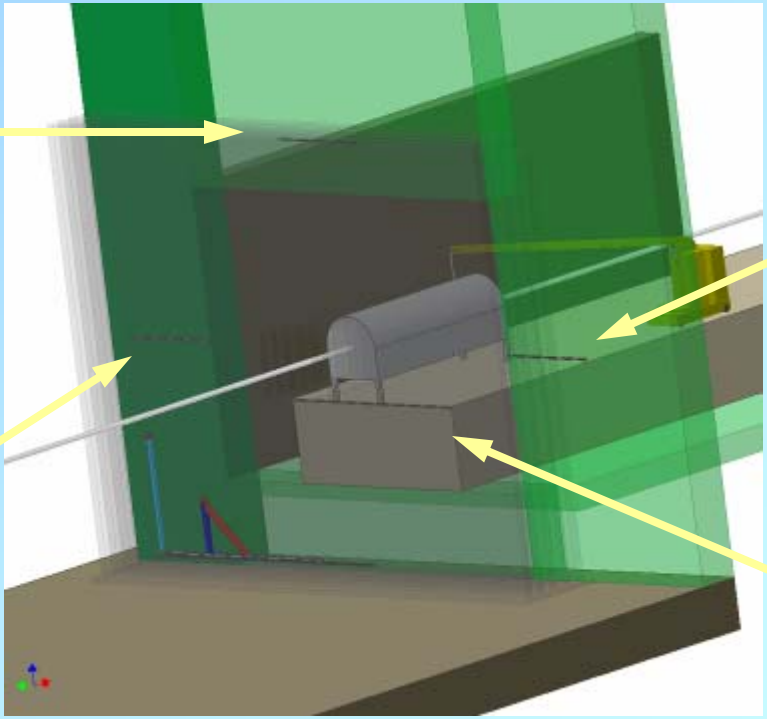
RPC3 North Installation Schedule

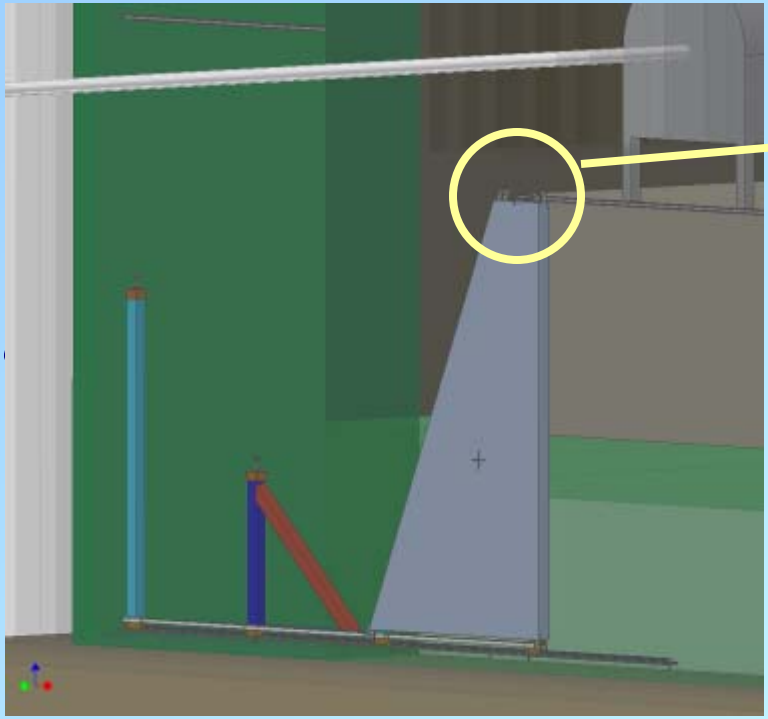
Task	Completion Date
Installation Concept Finalized	Apr. 24
Half-Octant Brackets, Connecting Blocks, under detector translating support design	Apr. 30
Installation Fixturing and Tooling Design	May 15
Redesign crystal palace/IR Gas Barrier	May 29
End of Run 9	June 28
Fixturing/Tooling, Brackets/Block/support Fabrication	June 30
Move Shielding/Remove Crystal Palace	June 29-July31
Move cable trays and piping in gap 5	June 29-July 31
Simulated (practice) installation with new fixturing/ tooling	July 13-July 31
Install, level & survey support structure	Aug. 3 - Aug 14
Half Octant Testing and Assembly Complete (1^{st} half Octant ready by Aug.17, 16^{th} by Sep.18)	Aug. 17- Sep. 18
Mechanical Install Align & survey RPC3 N	Aug 17 – Sep. 30
Install 3 elect. Racks, all cables & gas system	Oct. 1 – Oct. 30
Commissioning	Nov. 1 – Nov. 30
Install new crystal palace/IR Gas Barrier & Shielding	Nov. 1 – Nov. 30
Start Run 10	Dec. 1

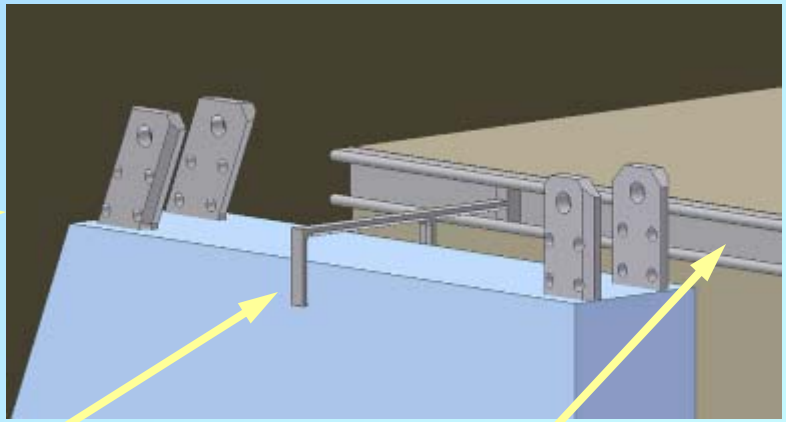
After the base support structures have been installed, Install the unistrut guide rails at the pedestal, above the gap 5 steel and at beam height levels. These rails will be used to prevent pitch rotation (about the horizontal axis perpendicular to the beamline [X-axis]).



Note: This view looks thru MuID Steel which has been made transparent for this representation

After HO1 west is installed, the clamp shown is used to keep the HO stable in the vertical configuration. Clamp is idealized actual clamp will have adjustments to align the pitch angle.



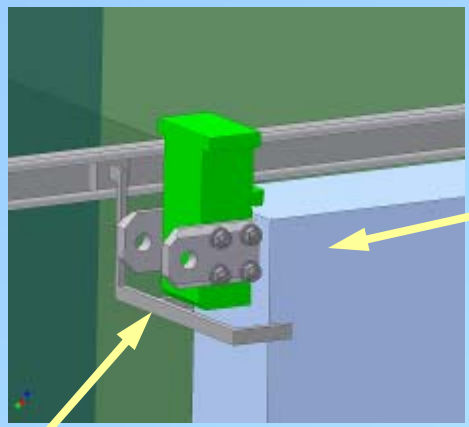


Clamp

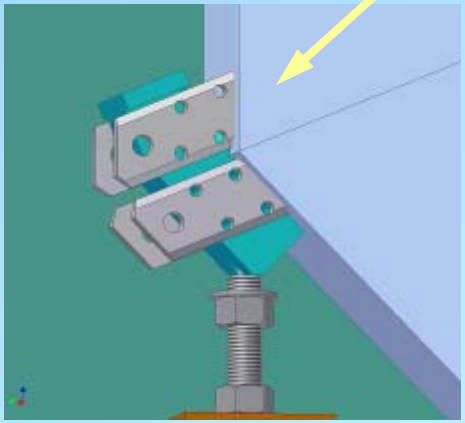
Unistrut low profile rail

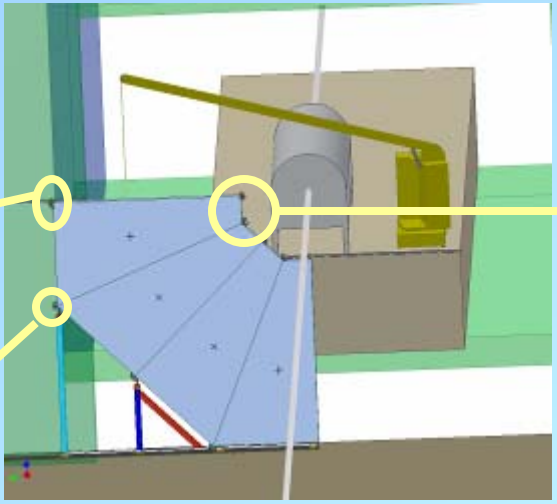
Note: These views look thru MuID Steel which has been made transparent for this representation

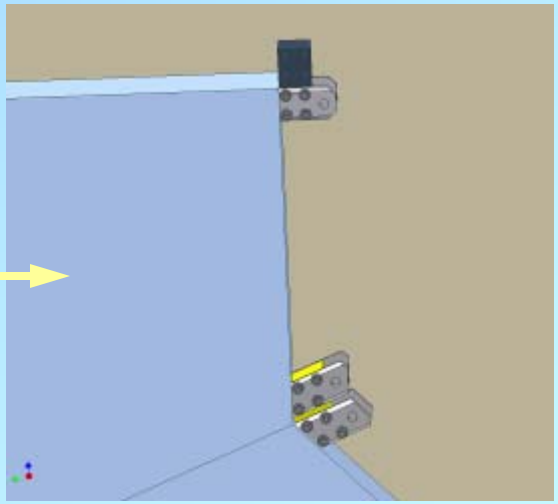
Half Octant West #4



Sliding clamp

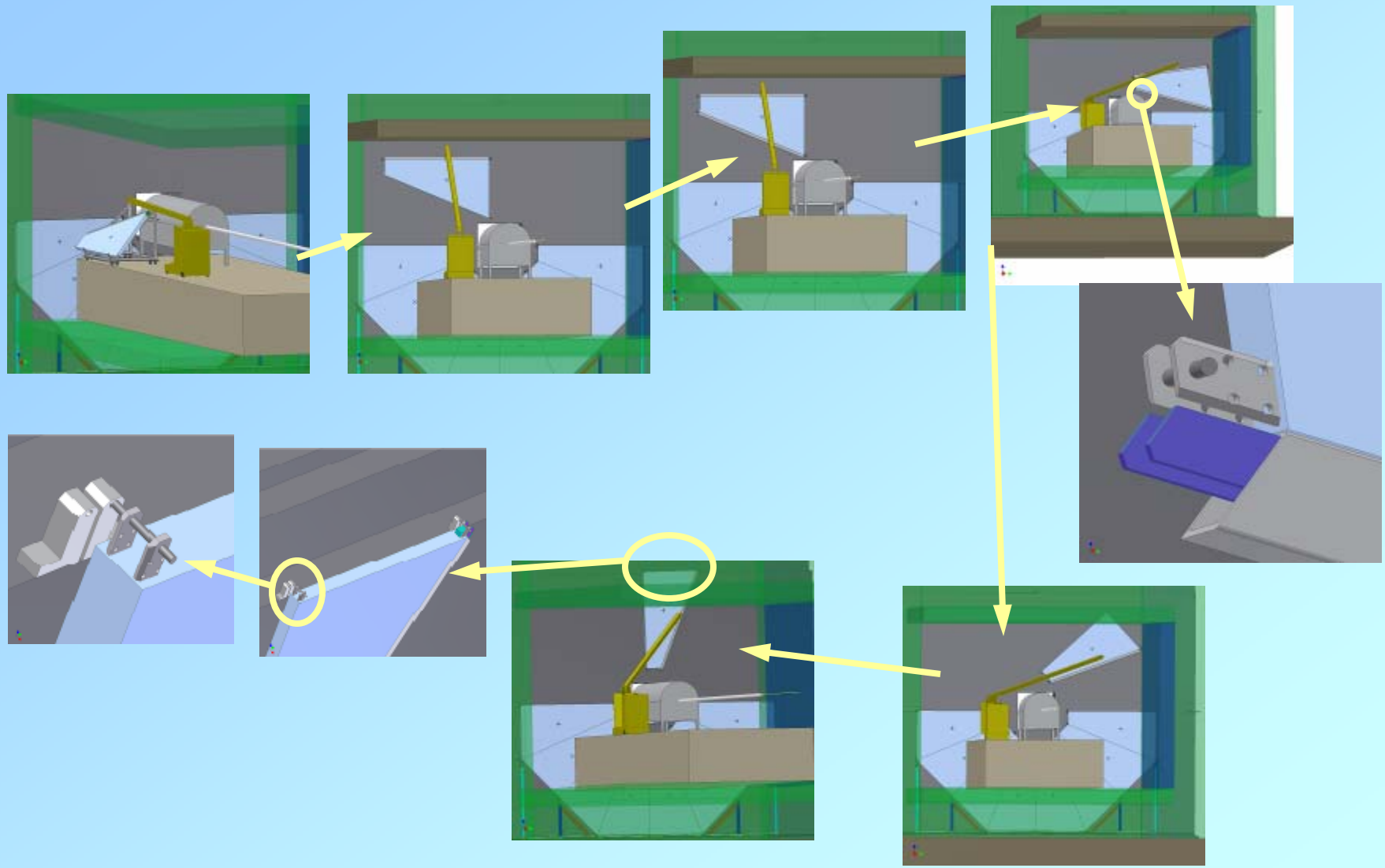




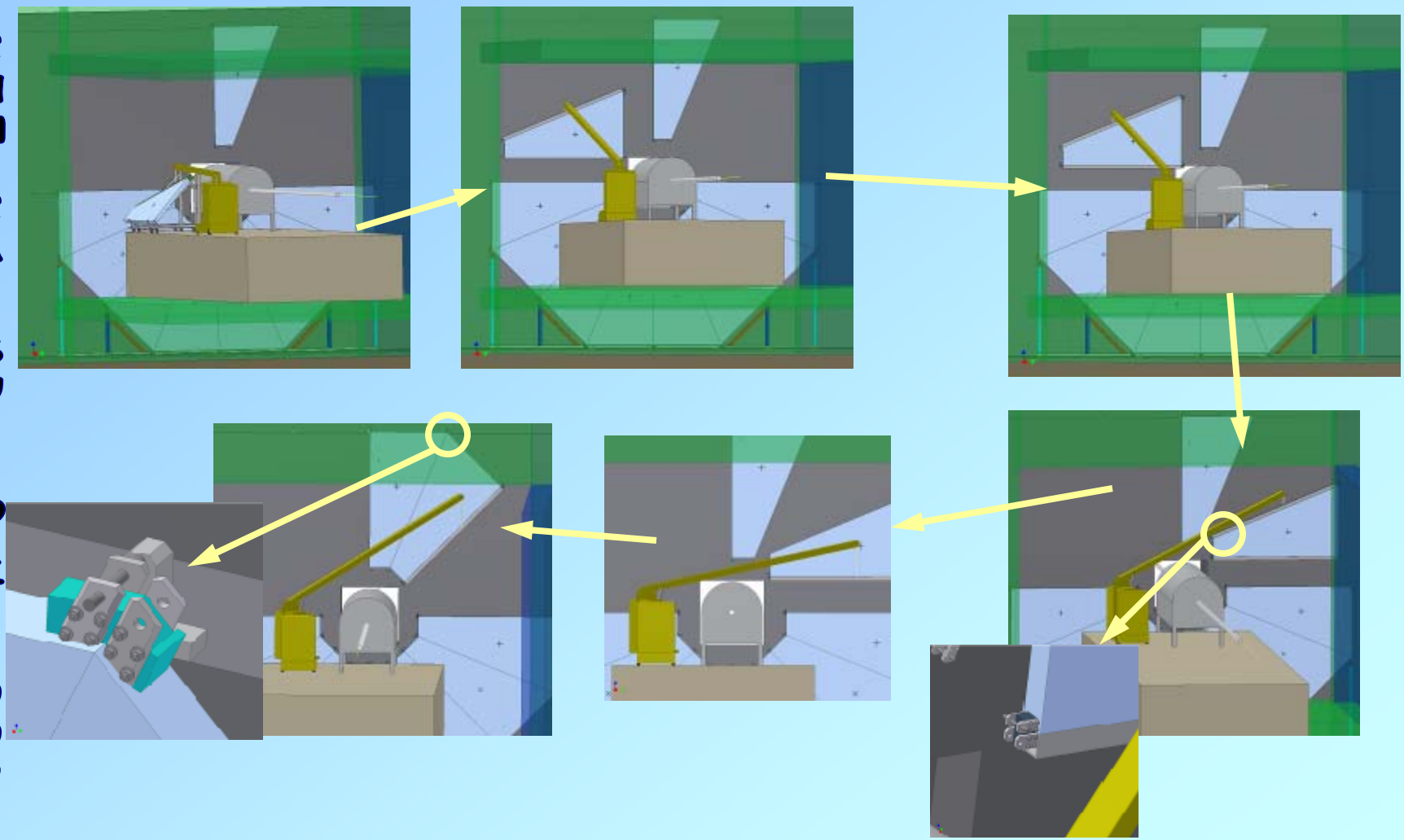


View looking thru MuID steel plates which have been made transparent. After HO_4 is positioned onto HO_3, inner angled connector at inner 3-4 joint is bolted, inner straight connector has been unbolted from lifting fixture and remains in place to accept HO_5. At outer face lower brackets have been locked into angled bracket at outer 3-4 joint and straight bracket remains in place to accept HO_5. West sliding base is slid west 60" and clamp is attached to the outer face of HO_4 and positioned to slide in the mid plane unistrut channel. After the clamp is attached slide the base back to the 0 position

Half Octant West #8

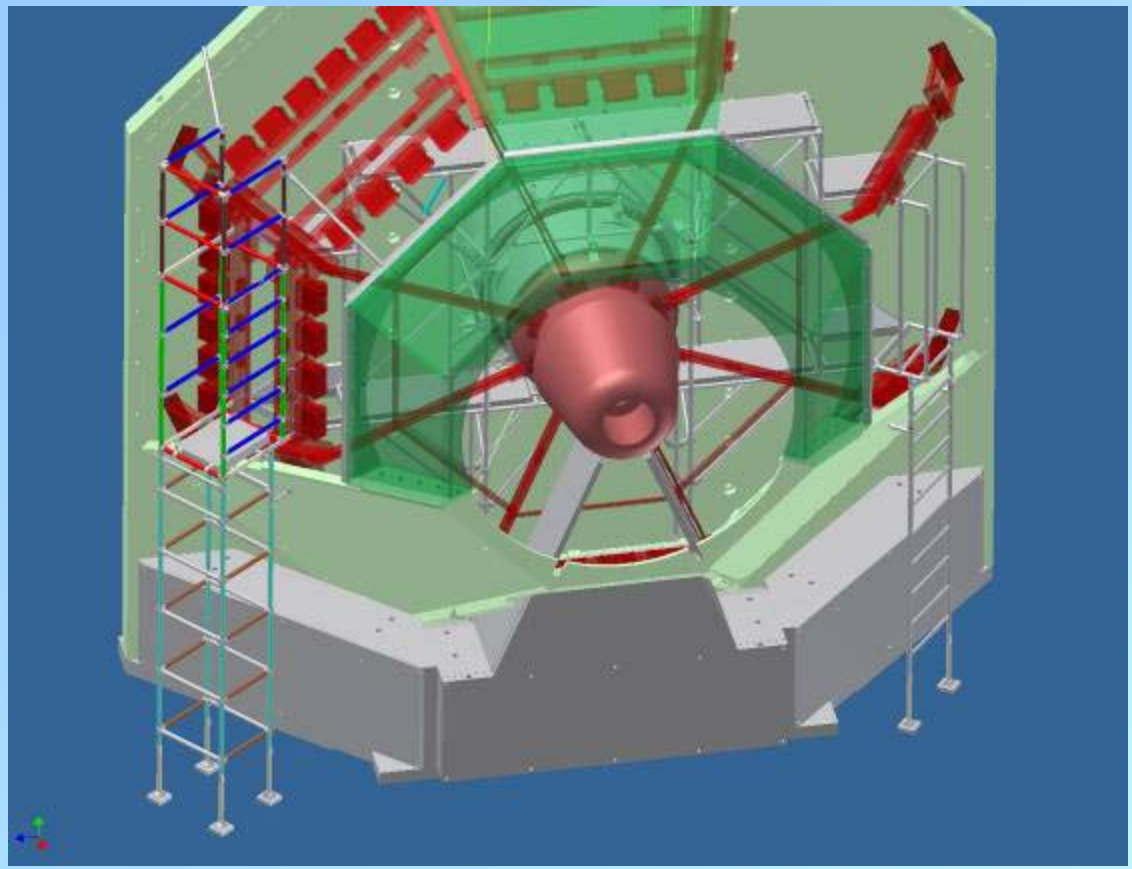


Half Octant West #7



MuTrigger FEE South

Task	Completion Date
• Install Station 1 South Scaffold (carpenters)	7/31
• Install Station 1 cable management	8/14
• Install station 2/3 scaffolding (Techs)	8/14
• Install station 1 FEE's & Electronics	8/28
• Install station 2 & 3 cable mngment	8/28
• Station 1 plumbing	9/11
• Install station 2/3 FEE's & electronics	9/25
• Station 2/3 plumbing	10/9



Concept approved at
C-A Design Review

Met with Donna Dowling to discuss
Bargaining Unit negotiations

MMS scaffolding

Designed for MuTr installation. Approved in 2000 for use. Stress analysis done for worst case. Current design has minor modifications.

MuTr Decapacitations

Task	Completion Date
Station 2/3 Decaps	8/14-8/28
Testing/verification	9/4

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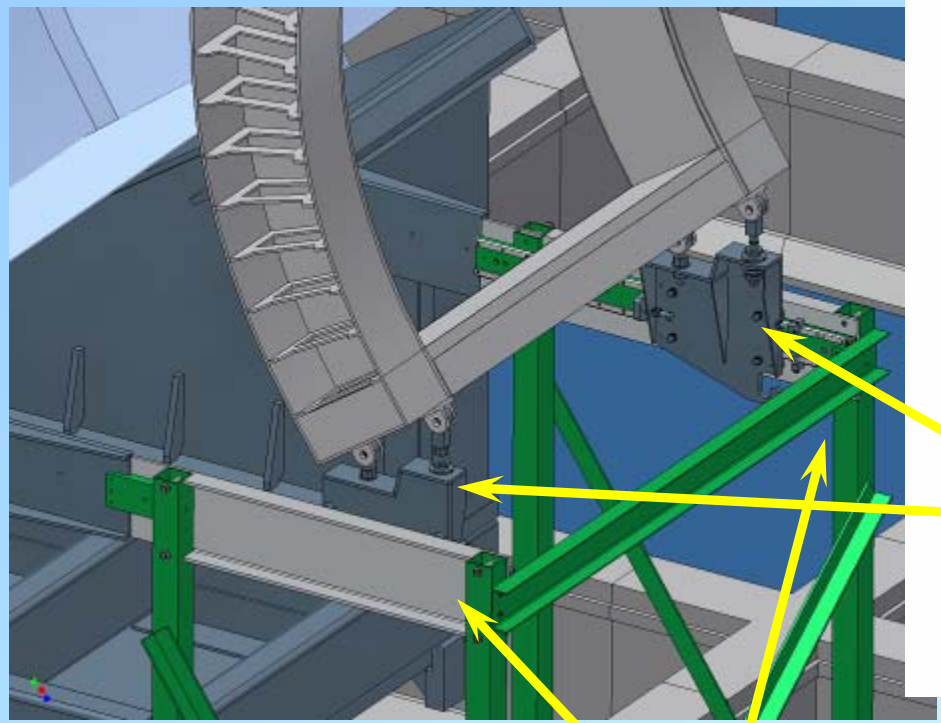
PC1 East Repair

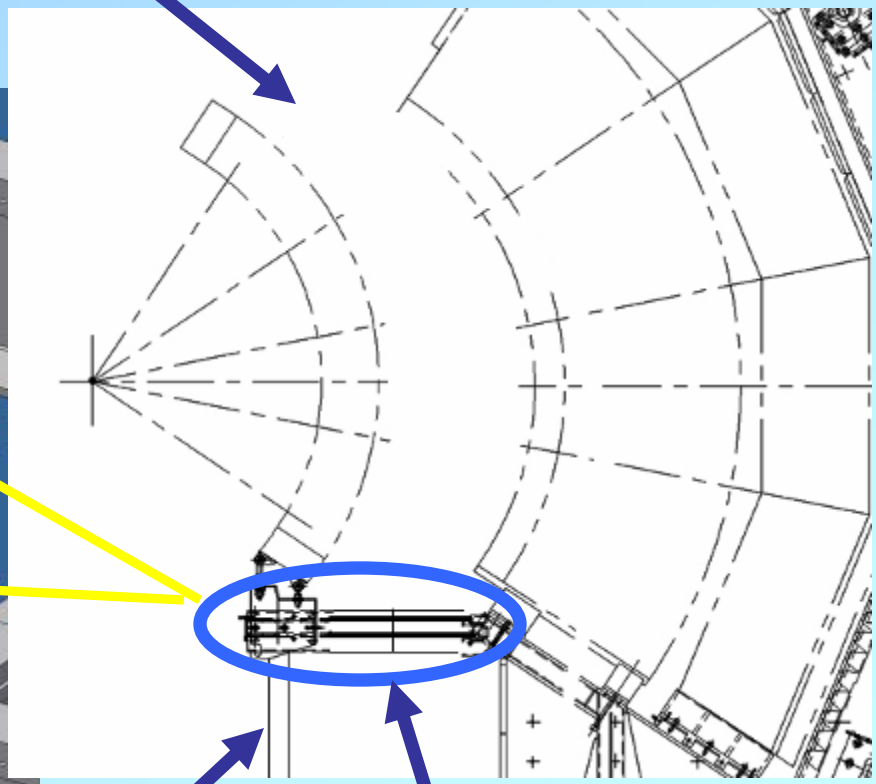
Task	Completion Date
• Design Repair support fixture	Done
• Review and approval	Done
• Fabrication	7/1 (order placed)
• Install support fixture	8/14
• Remove cables and plumbing	8/28
• Roll out DC/PC1	9/4
• Replace failed PC1	9/11
• Roll DC/PC1 in	9/18
• Restore cables and plumbing	9/25
• Test/commissioning	10/2

PC1 East Repair Fixturing Design

Repairs to be performed during '09 Shutdown

Access to PC1 is adequate to remove and replace module





Quote Rec'd from CS

New Column Supports Under railway extensions

New Railway extensions will allow DC to be pulled out ~ 3 feet more

Gas Pad Expansion, New Argon Dewar

Task	Completion Date
• Proposal	Done
• Review and Approval	5/1
• Design	6/1
• Site Preparation	7/1
• Install Empties racks	8/1
• Install Ar Dewar	9/1
• Test and Commission	10/1

(Rough guess actual schedule TBD)

New Argon Dewar

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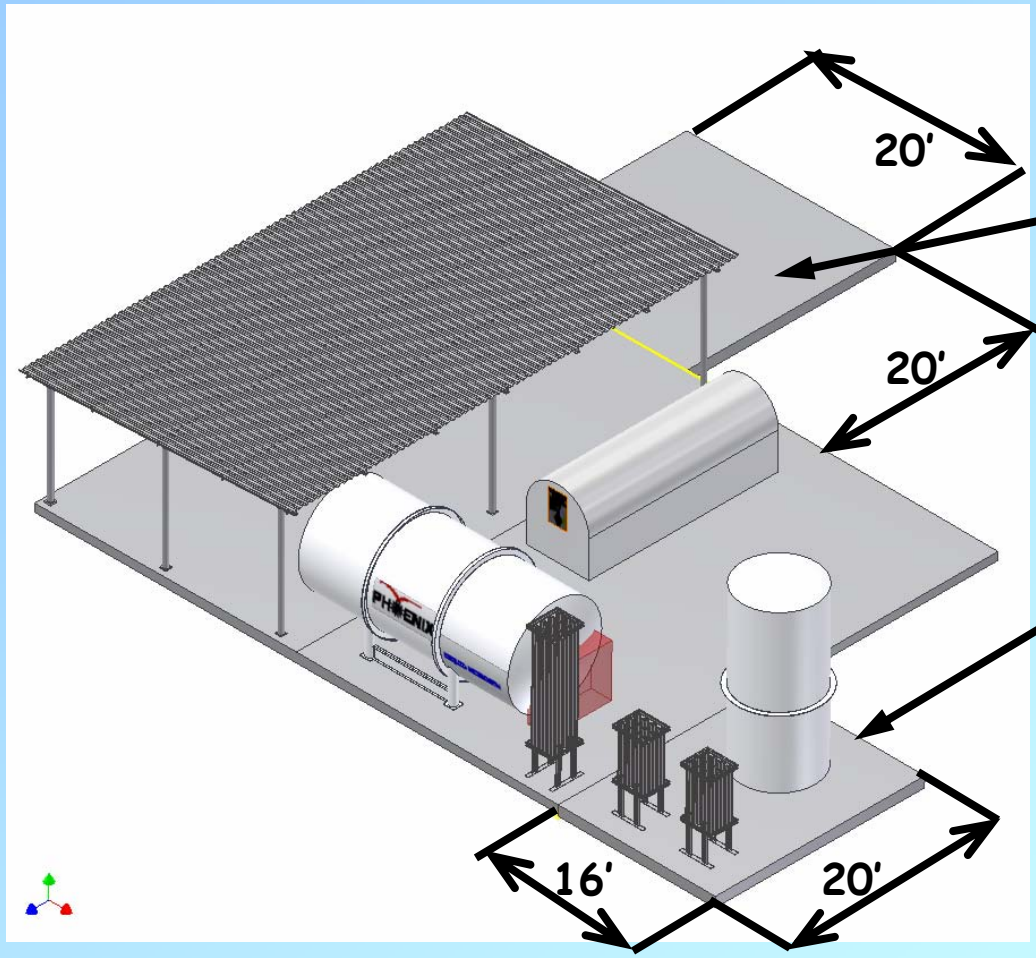


New storage pad for empty gas cylinders, 20'x 20', 9" min thick. reinforced concrete

New Argon Dewar Pad, 16' x 20', 12" minimum thickness, reinforced concrete.

Met with Dave Phillips to walk thru the plan

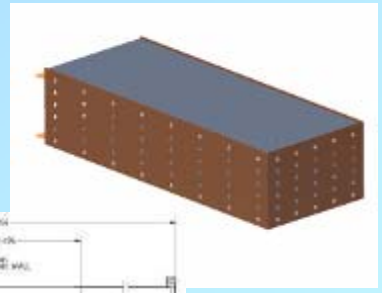
New DCM Rack Plumbing

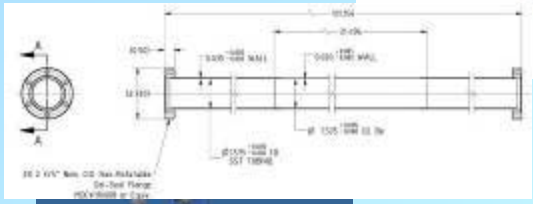
(Not Scheduled Yet)

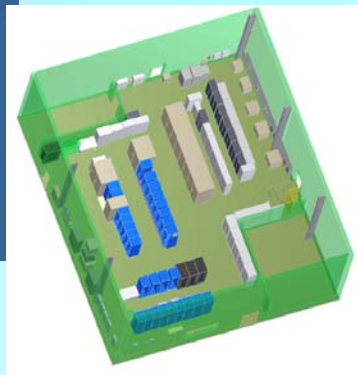
4 new DCM racks need cooling water plumbing

Other Work

Upgrades Support:
- New Beampipe sections (non-Be)
  (Sent Drawings to Mike Mapes)
- New Beampipe supports
- FOCAL prototype design support
- VTX fabrication tooling design
- VTX installation design
- FVTX design/eng'g support







Summer Sunday Prep
TBD Existing Detector Maint & Repairs
Maintenance & Overhead Tasks
Rack Room Reorganization

C-A-D AC, Water System, Electrical system work which may impact shutdown schedule: *Tasks, schedules, priorities TBD*

2009 Building Maintenance Issues

- Roof leaks in utility bathroom at northwest corner behind tech offices and over door between rack room and assembly hall.
- Heat wrap tape for trailer bathroom toilet drains to prevent freeze/clogging in winter.
- Improved Rack Room AC performance (This item has been addressed time and again but unsatisfactorily. Currently the AC fails periodically and is repaired only to fail again. On-condition maintenance is not adequate…an engineered solution is needed.)
- Icy conditions at mixing house north stairs

Safety, Security, etc.

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1. RPC Factory Safety - Certification system does not indicate re-certification frequency requirements. Factory workplan does not have this info. Gas procedure doesn't have it either, HV/LV procedure checklist to be followed once per test at least, once per shift at minimum. Are we following this? We need a schedule for periodic safety recertification for the Factory similar to the annual PHENIX safety review.

2. Ladder Safety – This ain't it

70 people die and 4000 are seriously injured each year due to improper use of ladders. BNL ladder training is on the web.

Where To Find PHENIX Engineering Info

Jury Duty
Paul couldn't weasel out of it!

Links for the weekly planning meeting slides, archives of past meeting slides,long term planning, pictures, videos and other technical info can be found on the PHENIX Engineering web site:

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm